NASA TECH BRIEF

Gage Accurately Controls Force for Placing Chips on Substrates
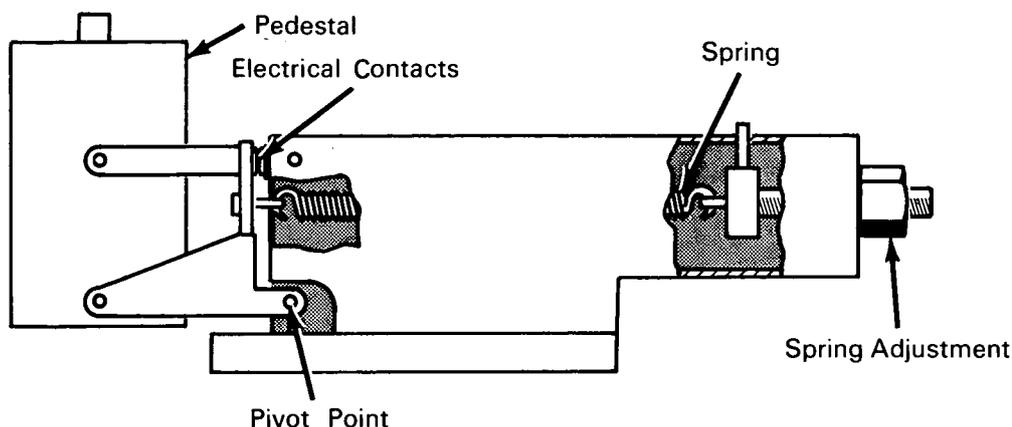
The problem:

To develop a device to control the force used in manually placing chips on substrates. The device must precisely control the compression load between 2 small members at loads as low as 25 grams.

The solution:

A chip placement force control gage that is preset by varying the spring deflection.

How it's done:

The module is placed in a holder and placed on top of the pedestal. The chip is manually placed on the module. A force is applied to the top of the device and the pedestal starts a downward movement. This is sensed through the electrical contacts which are in series with a signal light within the operator's view. When the preset placement force is reached, the contacts open. This preset force varies with the specific component. A signal light informs the operator that the proper load has been reached.

Notes:

1. The gage is accurate to within 5% at a 50-gram load. Since the inaccuracy is a function of the spring override, it may be further controlled by replacing the spring with a counterweight.
2. Inquiries concerning this invention may be directed to:

   Technology Utilization Officer
   Marshall Space Flight Center
   Huntsville, Alabama 35812
   Reference: B66-10675

Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA, Code GP, Washington, D.C. 20546.

Source: W. P. Benzie
of IBM
under contract to
Marshall Space Flight Center
(M-FS-1941)
Category 01